REMARKS - General

By the above amendment, applicant has corrected for specification objections as follows: The abstract of the disclosure has been replaced with a single paragraph as required by MPEP § 608.01(b).

Claims Rejections Under - 35 USC § 102

Claims 1-9 were rejected under 35 U.S.C. § 102(b) as being anticipated by The Handbook of Steel Drainage. The Handbook of Steel Drainage is said to disclose the recited spiral formed pipe comprising an elongated strip formed of ductile material such as sheet metal formed into adjacent helical convolutions, with a corrugated wall portion, seams which can be either lock seams, or welded, where the dimensional proportions are increased along with pipe size, and where it is noted that conventional pipes of this type are capable of ranging in diameters from 6 inches to 21 feet in diameter, and can be formed into arch shapes of large diameters too, as seen on page 38.

The applicant respectfully questions the applicability of this reference under 35 U.S.C. § 102(b). The reference does not contain language, illustrations, photos, charts, etc., that describe the applicants invention. The office action implies that there is language referring to spirally formed pipes, as conventional pipes, and that "it is noted that conventional pipes of this type are capable of ranging in diameters from 6 inches to 21 feet in diameter". This language does not exist within the reference sited (expressed or implied). The office action goes on to add "and can be formed into arch shapes of large diameters too, as seen on page 38". In context this too, is not expressed or implied. ***The applicants invention is not described in The Handbook of Steel Drainage, as the office action has implied, no convincing reason has been presented to reject the claims, based upon this reference, it therefore is not applicable, Claims 1-9 are patentable over this prior art reference under 35 U.S.C. § 102(b).***

In so much that the office action implies that there is language referring to spirally formed pipes, as conventional pipes, and that "it is noted that conventional pipes of this type are capable of ranging in diameters from 6 inches to 21 feet in diameter", when this language does not exist within the reference sited, either expressed or implied, it must be concluded that "The Handbook of Steel Drainage" *has been misunderstood by the examiner*, it does not teach what the examiner has relied upon it as supposedly teaching, ***Claims 1-9 are patentable over this prior art reference under 35 U.S.C. § 102(b) as it is a misunderstood reference.***

The Handbook of Steel Drainage does not address issues of how large diameter spirally formed pipes would be manufactured, or how they might be shipped. There are no photographs, charts, illustrations, etc., that would suggest that modifications could be made to accommodate the shipping or manufacturing technology required. No charts, tables, or language have been modified to include larger sizes of spirally formed pipes. The Handbook of Steel Drainage lacks any suggestion that the reference should be modified in a manner required to meet the claims, ***Claims 1-9 are therefore patentable over this prior art reference under 35 U.S.C. § 102(b).***

It is well known that legal size limits apply to the trucking industry, and that there are vertical clearance problems with shipping large pipes. A pipe up to 21 ft. diameter, would not be possible to ship. For all of the above reasons, i.e., unanswered questions, impossible to ship product, etc. ***The Handbook of Steel Drainage is an inoperative reference, Claims 1-9 are therefore patentable over this prior art reference under 35 U.S.C. § 102(b).***

The Handbook of Steel Drainage provides many examples of products made from metal conduits of bolted construction. Photographs are provided illustrating the assembly process. The products illustrated are produced with bolt together sections of structural plate. Structural plate pipe has existed for years, and small diameter spiral pipe has existed along side this product. Spirally forming pipes is known to be a fast and efficient means of producing pipe products. Yet in all these years, large diameter spiral pipes have not been made to produce products that have

traditionally been made with structural plate. This fact illustrates that ***while the concept itself may appear to be inherent***, it has been an ***Unappreciated Advantage. This new use for spirally formed pipe above fifteen feet diameter, and arch pipe made from spirally formed pipes above 144 inches in diameter provides for unappreciated advantages over the prior art of The Handbook of Steel Drainage, Claims 1 to 9 are patentable over this prior art reference under 35 U.S.C. § 102(b).***

Immaterial not claimed Intended use

Grain silos, metal buildings, highway overpasses, water tanks, etc., are just a few of the new possibilities for this invention. Most of these products have ***never*** been produced with spiral pipe and are themselves patentable. These products surely would have been considered by The Handbook of Steel Drainage, if such were obvious, or anticipated. This new pipe invention solves ***unrecognized problems that the Handbook of Steel Drainage could not have anticipated, The Handbook of Steel Drainage therefore is not applicable, Claims 1 to 9 are patentable over this prior art reference under 35 U.S.C. § 102(b).***

Table 1-1 Shapes and Uses of Corrugated Conduits, as seen on Page 38 of the Handbook of Steel Drainage, is an all inclusive chart covering a range of products generally referred to as Corrugated Conduits, and while Spirally formed Pipe should be considered as included in this table, it can not be considered as included in the full range of products shown. A look back to page 7 of the reference, Fig. 0-2 provides a photograph of a pipe loaded upon a truck, positioned over two large arch structures. This photograph provides an appropriate starting point for two relevant discussions:

Not only through

First, the two large arch structures are referred to as "twin **structural plate** pipe-arch culverts", further definition is available within the reference. Structural plate pipe is a bolted structure. The 6 x 2 in. corrugation is the standard of the American Association of State Highway Officials (Handbook of Steel Drainage, page 40). Fig. 1-6. Details of uncurved structural plate on page 54, and Fig. 1-10 High-strength steel bolt. . photograph on page 57, illustrate the nature of this

product is to be field assembled. Fig. D-1 and Fig. DM-1 shown on pages 26 and 36 respectively, illustrate the assembly process. Structural plate sections can be stacked for shipping, removed and assembled into large pipes and pipe-arches (spirally formed pipe is not a bolted structure).

Second, the pipe loaded upon a truck (page 7) is referred to as **shop fabricated culvert pipe**. Spirally formed pipe is shop fabricated, it is produced on equipment specifically designed for factory use. The factory equipment is not designed to produce pipes above 12 ft. in diameter. The pipe shown on the truck illustrates the reason for this, it appears to be about 8 ft. diameter. This is a legal load and does not require permits to ship to location. Any size above this becomes expensive if not impossible to ship. Page 39, provides support for this assertion, where it states, *shop-fabricated* pipe gradually increased in diameter to 96 in. and larger, and to be more specific, page 40 states: "For lock seam pipe, the seams and corrugations run helically (or spirally) around the pipe. For small diameters of subdrainage pipe (6, 8, 10 in., etc.) the pitch vs. depth dimension is 1 1/2 x 1/4 in. Larger sizes **(with diameters to 120 in.)** use 2 x 1/2 in., 2 2/3 x 1/2 in., and 3 x 1 in. corrugations". This description of corrugation information is very important to establishing a correct understanding of the information presented within the Handbook of Steel Drainage. Each product is identified by this corrugation information as follows:

Pipe Product	**Pitch and Depth**
Riveted or Resistance spot welded,	1 1/2 by 1/4 in.
Lock seam (spirally formed)	2 by 1/2 in.
	2 2/3 by 1/2 in.
	3 by 1 in.
Structural plate (bolted)	6 by 2 in.

Table 1-12 Handling Weight of Corrugated Steel Pipe (2 2/3 x 1/2 in.), page 47 of the reference, provides for a size range of 12 in. to **96 in. diameter**. As indicated above, this would apply to Riveted or Resistance spot welded, and Lock seam (spirally formed pipe products).

Table 1-13 Handling Weight of Corrugated Steel Pipe (3 x 1 in.), page 48 & 49 of the reference, provides for a size range of 36 in. to **120 in. diameter.** As indicated above, this would apply to Riveted or Resistance spot welded, and Lock seam (spirally formed pipe products).

Table 1-15 Design Details of Corrugated Steel Pipe-Arches (2 2/3 x 1/2 in.), page 50 of the reference, provides for a size range of 15 in. to **72 in. diameter**. As indicated above, this would apply to Riveted or Resistance spot welded, and Lock seam (spirally formed pipe products).

Table 1-16 Design Details of Corrugated Steel Pipe-Arches (3 x 1 in.), page 50 of the reference, provides for a size range of 36 in. to **120 in. diameter.** As indicated above, this would apply to Riveted or Resistance spot welded, and Lock seam (spirally formed pipe products).

Several Tables are provided within the reference for Structural Plate (bolted product) (6 x 2 in.) pipe, identifying the smallest size being 5 ft. and the largest up to 21 ft. or larger.

Referring now back to page 38 Table 1-1, of The Handbook of Steel Drainage. Spirally formed pipe would fit two categories; Round pipes from 6 to 120 in. and Pipe-arch from 15 to 120 in. **All other products are made with structural plate.**

The Handbook of Steel Drainage teaches away from a spirally formed pipe above twelve feet in diameter, in as much as all of the charts, tables, photographs, language, etc. only teach of spirally formed pipe up to 120 inch in diameter, it therefore is not applicable, Claims 1 to 9 are patentable over this prior art reference under 35 U.S.C. § 102(b).

The applicant has recently received U.S. Patent No. 6,000,261 for a New Portable Spiral Pipe Manufacturing System. This new system allows for the production of pipe at the jobsite. The size restrictions inherent to factory machinery have been eliminated. ***It was only after developing this new equipment design that the applicant realized larger diameters of spirally formed pipe would be possible.*** The Handbook of Steel Drainage does not describe, illustrate, or in any way present an example of a spirally formed pipe above 120 in. diameter. The table on page 38 makes no reference to spirally formed pipe of any specific size. *To reject the applicants invention under 35 U.S.C. § 102(b) requires that the invention be described in the prior art.* To imply that the invention is anticipated by the Handbook of Steel Drainage is actually a ***strained interpretation*** that can only be made by hindsight. ***A spirally formed pipe above 15 feet in diameter, and an arch made from a spirally formed pipe above 144 inches in diameter is not taught in the prior art, and requires a strained interpretation to assert that it is, Claims 1 to 9 are therefore patentable over this prior art reference under 35 U.S.C. § 102(b).***

The Handbook of Steel Drainage *has been misunderstood by the examiner,* it does not teach what the examiner has relied upon it as supposedly teaching, it does not describe, illustrate, or in any way present an example of a spirally formed pipe above 120 in. diameter. The table on page 38 makes no reference to spirally formed pipe of any specific size. ***The Handbook of Steel Drainage does not teach of a spirally formed pipe above 15 feet in diameter and/or an arch made from a spirally formed pipe above 144 inches in diameter and therefore is not applicable, Claims 1-9 are patentable over this prior art reference under 35 U.S.C. § 102(b) as it is a misunderstood reference.***

Claims Rejections Under - 35 USC § 103

Claims 1-4 were rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, 35 U.S.C. § 103(a) as obvious over Holcomb. The patent to Holcomb is said to disclose the recited spiral formed pipe comprising an elongated strip formed of ductile material such as sheet

metal formed into adjacent helical convolutions, with a corrugated wall portion 26, seams which can be either lock seams, or welded, where the dimensional proportions are increased along with pipe size, and where it is taught that conventional pipes of this type are capable of ranging in diameters from 6 inches to 21 feet in diameter and it is implied that the pipe in Holcomb can also be made up to those dimensions if such were needed, where the dimensions are not considered limited by the examples tested in Holcomb.

The applicant respectfully asserts that, there is no mention of examples tested in Holcomb, expressed or implied. The applicants Amendment A, correctly expressed that Tables A and B in the Holcomb patent can be used to identify the largest sizes considered. Reference to diameters of 6 inches to 21 feet are taken from The Handbook of Steel Drainage & Highway Construction Products, and are provided merely as background information on metal conduits, not as a teaching of Holcomb's invention (expressed or implied). ***The applicants invention is not obvious, nor is it described or anticipated by the reference of Holcomb. No convincing reason has been presented to reject the claims, based upon this reference, it therefore is not applicable, Claims 1-4 are patentable over this prior art reference under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a).***

In as much that the patent to Holcomb relies upon The Handbook of Steel Drainage & Highway Construction Products for reference to diameters of 6 inches to 21 feet, the arguments previously presented illustrate that this reference is not applicable, ***Claims 1-4 are patentable over this prior art reference under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a).***

Within the specification, application number 09/312,992 outlines many new uses for large diameter spirally formed pipe, Fig.1 provides illustrations as well. However the office action states: "Holcomb can be made up to those dimensions if such were needed, where the dimensions are not considered limited by the examples tested in Holcomb". There is no mention of examples tested (expressed or implied) For these reasons it must be concluded that the reference to

See Tables A&B

Holcomb has been misunderstood by the examiner, it does not teach what the examiner has relied upon it as supposedly teaching, ***Claims 1-4 are patentable over this prior art reference under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a) as it is a misunderstood reference.***

U.S. Patent No. 6,000,261 for a New Portable Spiral Pipe Manufacturing System issued late last year has made Spirally formed pipes above twelve feet in diameter possible. This is a significant advancement in manufacturing products that up till now had to be manufactured by other means. For large pipe and arch structures, a product known as structural steel plate has been the industry standard. Structural plate products were widely used for decades, but in recent years the cost and labor involved in assembly has caused these products to fall into disuse. ***It is now possible to build these products using this new spiral pipe manufacturing technology in a fraction of the time***. Instead of field assembly with bolts, and large cranes to lift plates, this new equipment simply rolls material out and forms it into pipe right at location. To imply that the invention is anticipated by, or obvious over Holcomb is actually a ***strained interpretation*** that can only be made by hindsight. ***A spirally formed pipe above 15 ft diameter is not taught in the prior art, and requires a strained interpretation to assert that it is, Claims 1 to 4 are therefore patentable over this prior art reference under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a).***

Structural plate pipe has existed for years, and small diameter spiral pipe has existed along side this product. In all these years, spiral pipes large enough in diameter to produce products made by structural plate pipes have not existed. This fact illustrates that ***while the concept itself appears to be inherent***, it has been an ***Unappreciated Advantage. This new use for spirally formed pipe, above fifteen feet diameter, provides for unappreciated advantages over the prior art of Holcomb; Claims 1 to 4 are patentable over this prior art reference under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a).***

Additionally, grain silos, metal buildings, highway overpasses, water tanks, etc., are just a few of the new possibilities for this invention. Most of these products have ***never*** been produced with

spiral pipe and are themselves patentable. These products surely would have been considered by Holcomb, if such were obvious, or anticipated by Holcomb. This new pipe invention solves ***unrecognized problems*** that Holcomb could not have anticipated, Holcomb therefore is not applicable, ***Claims 1 to 4 are patentable over this prior art reference under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a).***

Long lengths of pipe have always been considered an advantage of spiral pipe production. This is discussed by Holcomb, column 3, line 68 to column 4 line 5. The applicants initial belief was that the main advantage of producing spirally formed pipes at the job site was that longer lengths could be produced without concern for transportation. It was only after conceiving the portable machinery idea and considering actually going to the job site to make pipes, that the invention of larger diameter pipes was born. The results to be achieved by this new invention, are certainly new and unexpected over the prior art of Holcomb. This invention is not suggested by Holcomb, in as much as these results are certainly unusual and surprising. The applicants invention provides ***unexpected results*** not considered by Holcomb, therefore ***Claims 1 to 4 are patentable over this prior art reference under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a).*** This argument also speaks again that to assert that the invention is anticipated by, or obvious over Holcomb is actually a ***strained interpretation*** that can only be made by hindsight. A spirally formed pipe above 15 ft diameter is not taught in the prior art, and requires a ***strained interpretation*** to assert that it is, ***Claims 1 to 4 are therefore patentable over this prior art reference under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a).***

Holcomb teaches of a pipe product that will use less material, and cost less than comparable products (Holcomb column 3 line 23 to 30), while the applicants invention teaches of a product larger in diameter, providing for new uses. ***The applicants invention has clearly solved different problems than Holcomb, therefore Claims 1 to 4 are patentable over this prior art reference under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a).***

Column 1, lines 58-60, of Holcomb is referring to The Handbook of Steel Drainage and Construction Products as the authority for comments pertaining to a size range of 6 inches to 21 feet in diameter. It is apparent that Holcomb has provided the information in column 1, merely as background to introduce the more concise and relevant size and specifications pertaining to the subject matter that Holcomb considers important. Column 2, lines 2 to 4 provide additional basis for this assertion. It says, "There is also noted lock seam pipes, with seams and corrugations running helically (or spirally) around the pipe." The fact that it says "There is also noted" implies at least part, if not all of the information leading up to this point described corrugated pipes generally, of different construction, and that the discussion now would focus more clearly on spirally formed pipe. This is important because, column 2, line 7 identifies the largest size of spirally formed pipe possible, with the phrase, "with diameters up to twelve feet". This language is actually quite clear in the Holcomb patent when addressing the maximum diameter for spirally formed pipes, the maximum size identified is twelve feet, this speaks directly to the Holcomb invention and as a prior art reference to the applicants invention, all other types of pipe, with different types of construction are not relevant. Spirally formed pipes are produced with 3" x 1" and 2 2/3" x 1/2" corrugation profiles. This is the industry standard. Spirally formed pipes are not made larger than twelve feet in diameter. The Handbook of Steel Drainage and Construction Products teaches that larger sizes are made with 6" x 2" corrugation profile Structural Plate sections that are field assembled, with bolted construction. This is common knowledge within the industry. ***Holcomb actually teaches away from a spirally formed pipe above twelve feet in diameter, in as much as column 2, line 7 identifies the largest size of spirally formed pipe possible, with the phrase, "with diameters up to twelve feet", it therefore is not applicable, Claims 1-4 are patentable over this prior art reference under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a).***

Holcomb does not address issues, of how large diameter spirally formed pipes would be manufactured, or how they might be shipped, there are no illustrations, charts, language, etc., covering large diameter spirally formed pipe, or to suggest that modifications could be made to

accommodate the shipping or manufacturing technology required. Holcomb lacks any suggestion that the reference should be modified in a manner required to meet the claims, ***Claims 1 - 4 are therefore patentable over this prior art reference under 35 U.S.C. § 102(b) and 35 U.S.C. § 103(a).***

It is well known that legal size limits apply to the trucking industry, and that there are vertical clearance problems with shipping large pipes. A pipe up to 21 ft. diameter, would not be possible to ship. For all of the above reasons, (i.e.), unanswered questions, impossible to ship product, etc., the patent to Holcomb is an "inoperative reference", ***Claims 1 - 4 are therefore patentable over this prior art reference under 35 U.S.C. § 102(b) and under 35 U.S.C. § 103(a).***

Claims 5-9 were rejected under 35 U.S.C. § 103(a) as being obvious over Holcomb in view of The Handbook of Steel Drainage. The patent to Holcomb is said to disclose all the recited structure with the exception of reshaping the tube as an arch. The reference of The Handbook of Steel Drainage is said to disclose the recited convoluted pipe formed of a ductile metal material can be made from tubes having large diameters which are either rounded in shape or can be formed in arch shapes, that such can be formed of the same types of pipes including seam welded and lock seamed pipes. It would have been obvious to one skilled in the art to modify the shape of the pipe in Holcomb to be reshaped into an arch shape to provide a different profile which can be stronger as suggested by The Handbook of Steel Drainage.

The above paragraph contains direct quotations from the office action dated November 11, 2000. The sentence structure is confusing and there is an assertion that The Handbook of Steel Drainage suggests that arching of pipes is somehow stronger than round pipes. When The Handbook of Steel Drainage actually teaches that the main purpose of arching pipes is to allow for greater water flow in the lower portion of the pipe, thus reducing the overall height of the pipe as a buried structure. For these reasons it must be concluded *that the references of Holcomb in view of The Handbook Of Steel Drainage, have been misunderstood by the examiner, they* do not teach what

the examiner has relied upon them as supposedly teaching, ***Claims 5 to 9 are patentable over these prior art references under 35 U.S.C. § 103(a) as they are misunderstood references.***

In so much as the patent to Holcomb, and The Handbook of Steel Drainage have been discussed at length, the arguments previously presented illustrate that these references are not applicable, ***Claims 5 to 9 are patentable over these prior art references under 35 U.S.C. § 103(a).***

Holcomb makes no reference to arched pipe, and The Handbook of Steel Drainage does not provide information pertaining to the arching of spirally formed pipe. These prior art references do not contain any suggestion (express or implied) that they be combined, or that they be combined in the manner suggested. ***Claims 5-9 are therefore patentable over these prior art references under 35 U.S.C. § 103(a), as this is an unsuggested combination.***

It is well known in the spiral pipe manufacturing industry that arching of spirally formed pipes requires the use of pipe arching machinery. This type of machinery has not been produced to arch pipes above 144 inches in diameter. The pipe arches above 144 inches in diameter shown in the Handbook of Steel Drainage are manufactured of structural steel plates with bolted together construction. Those skilled in the art would find it physically impossible to combine the references in the manner suggested. ***The reference of Holcomb in view of the Handbook of Steel Drainage is impossible to combine in the manner suggested, Claims 5-9 are therefore patentable over these prior art references under 35 U.S.C. § 103(a).***

In so much that neither Holcomb or the Handbook of Steel Drainage, teach of a spirally formed pipe above 144 inches in diameter, and special pipe arching machinery would be required, it is clear that ***modifications not taught in the prior art, would be required to make the combination possible. The reference of Holcomb in view of the Handbook of Steel Drainage is impossible to combine without modifications, Claims 5-9 are therefore patentable over these prior art references under 35 U.S.C. § 103(a).***

The applicant has filed for patent on a new invention that will make it possible to arch large diameter spirally formed pipes. Neither Holcomb or the Handbook of Steel Drainage have suggested that this is possible. To imply that it would have been obvious to one skilled in the art to modify the shape of the pipe in Holcomb to be reshaped into an arch shape as suggested by The Handbook of Steel Drainage ***is actually a strained interpretation that can only be made by hindsight. The reference of Holcomb in view of the Handbook of Steel Drainage requires a strained interpretation to imply that they could be combined in the manner suggested, Claims 5-9 are therefore patentable over these prior art references under 35 U.S.C. § 103(a).***

The Handbook of Steel Drainage provides many examples of products made from metal conduits of bolted construction. Photographs are provided illustrating the assembly process. The products illustrated are produced with bolt together sections of structural plate. Structural plate pipe has existed for years, and small diameter spiral pipe has existed along side this product. Spirally forming pipes is known to be a fast and efficient means of producing pipe products. Yet in all these years, spiral pipes large enough in diameter to produce products made by structural plate pipes have not existed. This fact illustrates that while the concept itself may appear to be inherent, it has been an unappreciated advantage. This new use for spirally formed pipe arches made from pipes above 144 inches in diameter provides for ***unappreciated advantages*** over the prior art of Holcomb in view of The Handbook of Steel Drainage, ***Claims 5 to 9 are patentable over these prior art references under 35 U.S.C. § 103(a).***

Additionally, metal buildings, highway overpasses, homes, etc., are just a few of the new possibilities for this invention. Many of these products have ***never*** been produced with spiral pipe arches and are themselves patentable. These products surely would have been considered by Holcomb, or described in the Handbook of Steel Drainage if such were obvious. This new pipe arch invention solves ***unrecognized problems*** that Holcomb, in view of The Handbook of Steel Drainage does not anticipate, ***Claims 5 to 9 are patentable over these prior art references under 35 U.S.C. § 103(a).***

These two references are ***individually complete***, each reference is complete and functional in itself, so there would be no reason to consider combining the two to create the applicants invention. The reference of Holcomb in view of the Handbook of Steel Drainage is therefore not applicable, *Claims 5-9 are therefore patentable over these prior art references under 35 U.S.C. § 103(a).*

The references actually teach away from the suggested combination in as much as Holcomb makes no reference to arched pipes (expressed or implied) and the arched pipes suggested and illustrated in the Handbook of Steel Drainage are of bolted together construction both expressed and implied. The reference of Holcomb in view of the Handbook of Steel Drainage is therefore not applicable, as these references actually teach away from the suggested combination, *Claims 5-9 are therefore patentable over these prior art references under 35 U.S.C. § 103(a).*

Conclusion

Large diameter spirally formed pipes as described in application 09/312,922 were impossible to produce and/or ship until the applicant's related inventions were developed. The equipment did not exist. It is inconceivable to believe that an invention could have been considered by others, when the equipment required to make the invention did not exist.

The United States needs this new invention, much of our infrastructure is needing repair and replacement. According to the "American Iron and Steel Institute", over 500,000 bridges are failing and need to be repaired or replaced over the next 5 to 10 years. The applicant's invention provides an economical and sound approach to replacing bridges quickly. Homes and shelters in areas subject to severe weather and/or seismic activity should be made with these large diameter pipes as well. These are just a few examples of the importance of this new invention. This illustrates again that the invention is both novel and unobvious.

With all of the issues addressed in this amendment, the applicant submits that the specification and claims are now in proper form, and that the claims all define patentably over the prior art. Therefore the applicant submits that this application is now in condition for allowance, which action is now respectfully requested.

Conditional Request For Constructive Assistance

Applicant has amended the specification and claims of this application so that they are proper, definite, and define novel structure which is also unobvious. If for any reason this application is not believed to be in full condition for allowance, applicant respectfully requests the constructive assistance and suggestions of the Examiner pursuant to M.P.E.P. § 706.03(d) and § 707.07(j) in order that the undersigned can place this application in allowable condition as soon as possible.

Very respectfully,

Scott E. Johnston
Applicant Pro Se

16857 Hummingbird Lane, Cottonwood, CA 96022 Telephone & Fax (530) 527-4000

Certificate of Mailing: I certify that on the date below this document and referenced attachments, if any, will be deposited with the U.S. Postal Service as first class mail in an envelope addressed to: "BOX NON-FEE AMENDMENTS, ASSISTANT COMMISSIONER FOR PATENTS, WASHINGTON, DC 20231."

December 26, 2000 _____
Scott E. Johnston, Applicant